

TITLE

METHOD AND APPARATUS FOR MAKING BRISTLE SUBASSEMBLIES

ABSTRACT

5 A continuous method for making a polymeric bristle subassembly
using the steps of

 (1) continuously forming a wrap of polymeric filaments by
wrapping at least one filament around the axis of at least a three sided
mandrel having a moving cable support on each corner running the length of
10 the mandrel on the exterior corner of the mandrel capable of supporting and
moving the polymeric filaments of the wrap along the length of the mandrel;

 (2) feeding at least one base string outside of the wrap of
polymeric filaments to a selected portion of the mandrel as required to form
the subassembly, such as the corner or side of the mandrel, while the
15 polymeric filaments of the wrap are being moved the length of the mandrel;

 (3) bonding the base string and the polymeric filaments of
the wrap together by simultaneously pressing the base string in contact with
the filaments of the wrap and applying energy to the base string and the
polymeric filaments of the wrap; and

20 (4) cutting the polymeric filaments of the wrap at a point
downstream of where the polymeric filaments of the wrap are bonded with the
base string to form at least one bristle subassembly having at least one row
of filament segments connected to at least one base string.

 Other aspects of this invention are a continuous method
25 of making a bristle subassembly wherein the base string is omitted and the
filaments of the wrap are bonded to each other through the use of an energy
source, or the use of a polymeric bead to bond the filaments together or use
of a solvent or an adhesive to bond the polymeric filaments of the wrap
together to form a bristle subassembly.